

## REMARKS/ARGUMENTS

In an Office Action dated 13 May 2005, the Examiner required an election of claims among Group I, i.e., claims 1 – 9, 18, and 19, drawn to a prepolymer; Group II, i.e., claims 10 – 17, 20 and 21, drawn to a polyurea; or Group III, i.e., claims 22 – 24, drawn to a method. In response to the Examiner's request for affirmation of the 10 May 2005 verbal election by the undersigned, the Applicant elects claims 1 – 9, 18, and 19 with traverse; therefore, claims 10 – 17 and 20 – 24 have been withdrawn.

### Claim Rejection – 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 1 – 9, 18, and 19 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Claim 1: It is unclear what this claim encompasses since the prepolymer chain extender would seemingly be the reaction product of the amine and epoxy functional silicone, but as this claim is worded, the claim is drawn to a mixture of these components. Clarification is required.

Claim 3: This claim is incomplete in the "x," "y" and "z" are undefined. Also it is unclear what is attached to the terminal Si atoms at the two unfilled valences.

Claims 4 to 9: The amounts of amine and epoxy functional silicone in the prepolymer is unclear. The Examiner assumes, though it is not clear, that the parts by weight is based on the total weight of the polyol prepolymer chain extender, but it is unclear what (for example) 50 parts by weight, based on the total weight of the polyol chain extender, or 900 parts by weight, based on the total weight of the polyol chain extender, means.

The phrase "parts by weight" is generally based on a fixed amount, such as 100 parts by weight. Though not indefinite, it is redundant to define "x" twice in claims 6 to 8. In claim 8 is also indefinite because polyaspartic ester is not an amine.

Claim 18: Reference to an adduct in claim 18 is confusing since an amine, on its own, is not an adduct.

Claims 1, 3 and 4 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 3 and 4 of copending Application No. 10/839,889. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. Note that the phrase "for a silicone modified polyurea" is a future intended use clause that does not distinguish the polyol prepolymer chain extender claimed from that in '889.

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Regarding claim 1, the Applicant has amended claim 1 to clarify that the prepolymer chain extender is the reaction product of the amine and the epoxy functional silicone.

Regarding claim 3, the Applicant has amended it to clarify that the values "x," "y," and "z" are integers from about 1 to about 100. Regarding the two unfilled valences, hydrocarbon groups, such as alkyl groups, are attached to the Si atom at the two unfilled valences. The Applicant has amended claim 3 to add the "R" groups to the two unfilled valences on the Si atoms. "In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on the original claims if their content justifies it." TMEP §608.01(I). The additions to claim 3 are not new matter, as these are the integers and disclosure related to the exemplary epoxy functional silicone SILRES® HP 1000 from Wacker Chemicals, supported and described in the specification in the originally filed application. (See Page 4, Lns. 18 – 21)

Regarding claims 4 – 9, the Applicant has amended them to clarify that the parts by weight of the at least one amine and the said at least one epoxy functional silicone are based on 100 parts by weight of the total weight of the total polyol prepolymer chain extender. In addition, the Applicant has amended claims 6 – 8 to delete the redundant matter.

Regarding claim 18, the Applicant has amended it to delete the term "adduct" and add the term "excess" in its place to clarify that the at least one amine is added in an excess relative to said at least one epoxy functional silicone. (See Pg. 9, Ln. 26 – Pg. 10, Ln. 1)

**Double Patenting Rejection - Statutory**

The Examiner provisionally rejected claims 1, 3, and 4 under 35 USC §101 as claiming the same invention as that of claims 1, 3, and 4 of copending Application No. 10/839,889. This rejection is respectfully traversed. The Applicant has amended claim 1 to include the limitations that the epoxy functional silicone is branched and contains a phenyl group; limitations found in claim 3, so as to differentiate claim 1 in the present

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application from claim 1 in the copending Application No. 10/839,889. The same invention is not being claimed twice with regards to the present application and copending Application No. 10/839,889. The Examiner has failed to make a *prima facie* case of same-invention double patenting, thus it is requested that the Examiner withdraw this rejection.

**Double Patenting Rejection – Nonstatutory**

The Examiner provisionally rejected claims 2, 5, 18, and 19 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2, 5, 36, and 37 of copending Application No. 10/839,889. A Terminal Disclaimer under Rule 321 covering claims 2, 5, 36, and 37 is filed herewith. Therefore, it is believed that the Examiner's rejection of claims 2, 5, 18, and 19 is overcome and these claims are allowable.

**Claim Rejections – 35 USC §102**

Claims 1 – 3, 18, and 19 have been rejected under 35 U.S.C. §102(b) as being anticipated by Czech (US Patent No. 5,807,956). This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

Czech teaches silicone block copolymers prepared by the reaction between an epoxy functional siloxane and a diamine. See for instance the copolymer structure on column 1, lines 55 to 60, and the reactants detailed in column 3, lines 35 to 40. The terminal epoxy groups in the siloxane in Example 1 and the repeating dimethyl siloxane units meet the units in claim 3. The various diamines in Table 2 meet claim 2.

Example 1 performs the reaction between the epoxy siloxane at 80°C, which corresponds to 176°F, for a period of time of approx. 3 to 6 hours. This meets the time and temperature requirements of claim 18.

Note that patentees need not teach applicant's future intended use for the prepolymer to anticipate it.

The Czech reference discloses copolymers comprising alternating units of polysiloxane and amino-polyalkyleneoxide and that are non-crosslinked and are only linear molecules, as opposed to branched molecules as disclosed in the present application. (See col. 1, Ins. 38 – 40, col. 2, Ins. 44 – 49) The reactants disclosed in the Czech patent cited by the Examiner are epoxy endblocked polysiloxanes and

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polyalkyleneoxides terminated with primary or secondary amines. The epoxy endblocked polysiloxanes are linear, not branched, molecules as disclosed in the present application and as found in the amended independent claims 1 and 18. Furthermore, the endblocked polysiloxanes taught by Czech do not contain a phenyl group as taught and claimed in the present application. Applicant has amended claims 1 and 18 to include the limitations that the at least one epoxy functional silicone is a branched molecule containing a phenyl group. This arrangement improves the solubility of the epoxy functional silicone with the at least one amine.

Thus, the cited Czech Patent fails to meet all the elements recited in Applicant's independent claims 1 and 18 and Applicant believes that claims 1 and 18 are allowable under 35 U.S.C. §102(b) over the Czech Patent, since the Czech Patent fails to meet all the limitations recited in these claims. Applicant also believes that dependent claims 2 – 3 and 19 are also allowable under 35 U.S.C. §102(b) over the Czech Patent, since these claims depend on allowable base claims.

Claims 1 – 3 have been rejected under 35 U.S.C. §102(a) as being anticipated by WO 02/10255, as interpreted by the English language equivalent Herzig et al. (US Patent No. 6,835,419). This rejection is respectfully traversed. With respect to this rejection, the Examiner notes:

WO 02/10255 teaches the reaction product between an epoxy siloxane and a diamine. While the product is subsequently protonated, the reaction product is an isolated and stable intermediate polymer that anticipates that claimed. See for instance the abstract of WO 02/10255.

Particular attention is drawn to the teachings in Herzig et al., for instance on column 3, which teaches the reaction between a polyamine and an epoxy siloxane. Note the working examples, which react a siloxane having terminal epoxy groups and dimethylsiloxane groups meeting the structure in claim 3 with a diamine meeting claim 2. This anticipates the instant claims.

The Herzig et al. reference discloses a reaction product between a *linear* epoxy-containing organosilicon compound and a polyamine that are non-crosslinked and are only linear silicon containing molecules, as opposed to branched silicon containing molecules as disclosed in the present application. (See col. 2, ln. 52 – col. 3, ln. 2; col.

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3, Ins. 21 – 38) Additionally, the Herzog et al. reference discloses alpha-omega organosilicon compounds, which are *linear* silicon containing compounds and not *branched* silicon containing compounds. (See col. 8, Ins. 63 – 67; col. 14, Ins. 25 – 29, 43 – 47; col. 15, Ins. 63 – 67) The reaction products have linear silicon containing molecules, which are contrary to the branched silicon containing molecules as disclosed in the present application and as found in the amended independent claims 1 and 18. Applicant has amended claims 1 and 18 to include the limitations that the at least one epoxy functional silicone is a branched molecule containing a phenyl group. This arrangement improves the solubility of the epoxy functional silicone with the at least one amine.

Thus, the cited Herzog et al. Patent fails to meet all the elements recited in Applicant's independent claim 1 and Applicant believes that claim 1 is allowable under 35 U.S.C. §102(b) over the Herzog et al. Patent, since it fails to meet all the limitations recited in these claims. Applicant also believes that dependent claims 2 – 3 are also allowable under 35 U.S.C. §102(b) over the Herzog et al. Patent, since these claims depend on an allowable base claim.

#### ***Claim Rejections – 35 USC §103***

Claims 18 and 19 have been rejected under 35 U.S.C. § 103(a) as being anticipated by WO 02/10255, as interpreted by the English language equivalent Herzog et al. (US Patent No. 6,835,419). This rejection is respectfully traversed. With respect to this rejection, The Examiner notes:

WO [02/10255], as interpreted by Herzog et al., does not specifically teach a reaction time. Column 12, lines 40 to 45, teaches temperature ranges that embrace that claimed. For instance the specifically delineated preferred lower temperature of 80°C is within the claimed range. While this excerpt fails to teach a specific duration for the reaction, note that the working examples use times that are consistent with that claimed. Example 1 reacts for 3 hours while Example 2 reacts for 24 hours. While these examples use a different temperature, it would have been obvious for one having ordinary skill in the art to use a temperature within claimed range since such temperatures are taught as being operable by Herzog et al. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges

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involves only routine skill in the art. In this manner claims 18 and 19 are rendered obvious.

As argued above, the Herzig et al. reference discloses a reaction product between a *linear* epoxy-containing organosilicon compound and a polyamine that are non-crosslinked and are only linear silicon containing molecules, as opposed to branched silicon containing molecules as disclosed in the present application. (See col. 2, ln. 52 – col. 3, ln. 2; col. 3, lns. 21 – 38) Additionally, the Herzig et al. reference discloses alpha-omega organosilicon compounds, which are *linear* silicon containing compounds and not *branched* silicon containing compounds. (See col. 8, lns. 63 – 67; col. 14, lns. 25 – 29, 43 – 47; col. 15, lns. 63 – 67) The reaction products have linear silicon containing molecules, which are contrary to the branched silicon containing molecules as disclosed in the present application and as found in the amended independent claim 18. Applicant has amended claim 18 to include the limitations that the at least one epoxy functional silicone is a branched molecule containing a phenyl group.

Thus, the cited Herzig et al. Patent fails to meet all the elements recited in Applicant's independent claim 18 and Applicant believes that claim 18 is allowable under 35 U.S.C. §102(b) over the Herzig et al. Patent, since it fails to meet all the limitations recited in these claims. Applicant also believes that dependent claim 19 is also allowable under 35 U.S.C. §102(b) over the Herzig et al. Patent, since this claim depends on an allowable base claim.

In addition, Table 9 has been amended to correct typographical errors found in the Example numbers located at the top of Table 9.

For the reasons explained above, it is believed that pending claims 1 – 9, 18, and 19 are allowable and their consideration and allowance are respectfully requested. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

The undersigned attorney requests Examiner Moore to telephone the undersigned if a conversation could expedite prosecution. Applicant authorizes the Commissioner to charge any additionally required payment of fees to American Express

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Respectfully submitted,  
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